



Department of Energy

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MAY 26 1993

Mr. Martin Hestmark  
U. S. Environmental Protection Agency, Region VIII  
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Mr. Gary Baughman  
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Gentlemen:

As requested in the referenced letter, (January 5, 1993 CDH/EPA Letter to DOE, "Request to Investigate OU-4 Sludge Removal Options) pondsludge handling options have been studied and the results are enclosed. While the options investigated do not match exactly your request, they are similar enough to provide good insights into potential directions for the Solar Ponds cleanup program. These options were briefed to CDH/EPA staff on March 1, 1993, at a meeting with DOE and EG&G at the Interlocken offices.

ISSUE 1: USE OF BUILDING 374 FOR POND 207C SLUDGE

Using the equipment in Building 374 to dry the pond contents was investigated. The scenario was to take the entire contents of Pond 207C to the Building 374 spray dryer, bypassing the evaporator units, and storing the resulting dry material (not mixing it with cementing agents). The referenced letter mentioned taking only the "brine" and redissolved salts to the spray dryer. Due to schedule tightness and not having a readily accepted way to separate the brine from the sludge (it is all somewhat intermixed in the pond) and recognizing that the sludge would still be left, the decision was made to look at homogenizing the entire contents of the pond and take it to the Building 374 spray dryer.

The enclosed report, "Feasibility Study for Building 374 Pondsludge Processing" (enclosure 1) looks into the technical feasibility of this approach. This report cited an estimated processing time of 18 months (page 9), but did not address the impact of cold weather on the transfer operation. That impact is estimated to be 6 to 7 months due to health and safety concerns and the fact that the salts precipitate at about 37 deg F and don't redissolve until about 48 deg F. Thus total processing time for this scenario is estimated to be 24 to 25 months, plus time to alter equipment in Building 374 per page 10 of the report.

MAY 26 1993

G. Baughman and M. Hestmark  
93-DOE-04753

2

The enclosed report mentions that the dried material will be an oxidizer (page 10) but does not support that statement or go into detailed ramifications. Enclosure 2 contains excerpts from a 1986 report supporting the statement that the dried salts are oxidizers. Ramifications of this are far reaching. National Fire Protection Association (NFPA) and Uniform Building Code (UBC) provisions for storage of oxidizers must be met. In the UBC, those requirements are in Chapter 9, Requirements for Group H Occupancies, and Division 3 assuming the dried material is a class 1 or 2 oxidizer. Some of the highlights of these requirements are 1) floors of liquid tight construction, 2) probable requirement for liquid drainage and containment system depending on fire code, and 3) probable requirement for sprinkler system depending on fire code. Storage facilities of this type are not currently available at Rocky Flats.

#### ISSUE 2: USE OF BUILDING 374 EVAPORATORS ON EXCESS WATER FROM POND 207B

Building 374 evaporators have, and are being used for evaporating water from Pond 207B. In addition, a connection is being made to facilitate use of Building 374 evaporators as a backup to the new Building 910 evaporators to process Intceptor Trench System (ITS) water. We have also executed a diversion of the ITS water to the Modular Tanks prior to operational status of the Building 910 evaporators by utilizing Building 374 evaporators.

#### ISSUE 3: USE OF RELINED PONDS

Relining of Pond 207B north and center was scoped, estimated, and scheduled. Two Ponds were being utilized in order to segregate the 207B and 207C Pond sludge and hence preserve the characterization and treatability work performed to date. The scenario is as follows.

1. Consolidate Ponds 207B into 207B south (currently being pursued). 207B south has the best liner and this consolidation is considered a prudent action regardless of future plans.
2. Drill vertically into the subgrade of 207B north and center for characterization. Determine whether or not old liners and subsoil need to be removed.
3. Construct two relined ponds either to RCRA standards or some modified approach after regulatory approval.
4. Transfer/pump contents from Ponds 207C and 207B south into the two relined ponds.
5. Perform final waste processing when a repository and a final Waste Acceptance Criteria are available, after delisting of hazardous component of final waste form has been achieved, or as otherwise determined after regulatory approval.

MAY 26 1993

G. Baughman and M. Hestmark  
93-DOE-04753

3

Two scope and estimates were done, (Attachment 3 & 4). The first is for the RCRA compliant relining with open tops, relying on a water cover to prevent sludge from drying and potentially becoming airborne. The second is for double lined ponds without 3 feet of clay but including covers. The covers raise a problem during ultimate processing in that they will hinder sludge reclamation and will have to be removed. The schedules for these options show a conservative approach to permitting using durations for full RCRA permits. Possibly up to a year can be trimmed from these schedules if the IM/IRA approach can be used as the approval vehicle.

#### CONCLUSION

In analyzing the above studies, giving due consideration to schedule, future processing, and technical feasibility, a relining pump/store scenario seems the best approach. This approach results in the shortest time to eliminate the pond material as a source of soil contamination while preserving future processing flexibility and allows the OU-4 remediation effort to continue with little impact. The processing of 207C Pond material in Building 374 does not seem a worthwhile approach because it 1) requires new H-occupancy storage facilities, 2) requires equipment modifications to B374, 3) would take 25 months after items 1 and 2 are done, 4) resulting form of the pond material will present additional costs for material reclaim and container cleanout, and 5) still leaves the B pond material to handle.

If you have any questions or concerns on this issue, please contact Scott Surovchak at 966-3551 or Steve Howard at 966-3040.

Sincerely,



James K. Hartman  
Assistant Manager for Transition  
and Environmental Restoration

Enclosure